

Notice of Allowability

Application No.

09/719,580

Examiner

Tatyana Zalukaeva

Applicant(s)

NAKAGAWA ET AL.

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1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to March 25, 2005.
2. ☒ The allowed claim(s) is/are 1-8,10-12,15-17,25-32,37 and 38.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Amernick, esq., on April 28, 2005.

The application has been amended as follows:

Cancel claims 13, 14, 20-24, and 33-36.

Allowable Claims

2. Claims 1-8, 10-12, 15-17, 25-32 and 37, 38 are allowed over the prior art of record.

3. The following is an examiner's statement of reasons for allowance: the following patents present closest prior art of record: EP 0357036, Siol et al et al (U.S. 5,483,003) or Matyaszewski U.S. 5,807,937

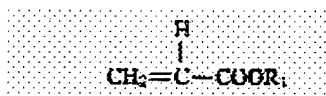
EP'036 discloses a method for preparing comb/branched polymer consisting of a methacrylic macromonomer, as a branch ingredient, and acrylic ester as a backbone ingredient (abstract), wherein the macromonomer synthesis is presented in the paragraph bridging pages 7 and 8, this macromonomer having molecular weight distribution of 1.2. (page 8, lines 9,10). The macromonomer is prepared by living

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polymerization. With regard to claim 13, see page 6, lines 30-32. However, EP'036 differs from the instant claims by disclosing living anionic polymerization for obtaining macromonomer vs. living radical polymerization for obtaining macromonomer, and what is more important, the terminal group of the macromonomer in EP'036 is a halogen containing vinyl group, contrary to the terminal group presented by the present formula (I).

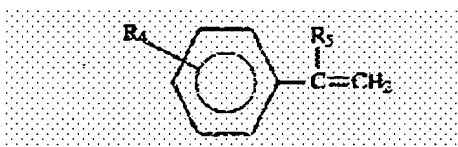
Siol discloses comb polymers having a molecular weight greater than 50,000 Dalton, comprised of:

(A) 5-50 wt. % of macromonomers comprised of methyl methacrylate or copolymers of methyl methacrylate with comonomers chosen from other (meth)acrylic acid esters and styrenes; containing a terminal unit with a radically polymerizable group and having a glass transition temperature (T_g) of at least 60C., a molecular weight in the range 500-100,000 Dalton (B) 5-90 wt. %, based on the total weight of the comb polymer, of monomers or monomer mixtures of formula I



where R₁ is a C₁ -C₁₂ -alkyl group; and

(C) 5-50 wt. % based on the total weight of the comb polymer, of a phenyl group-containing radically polymerizable monomer of formula



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(abstract, col. 1, lines 60-67, col.2 lines 1-55).

Macromonomers are prepared by **living anionic or cationic polymerization, or by free radical polymerization**. Thus, Siol does not anticipate or suggest the preparation of macromonomer by living radical polymerization, which mechanism is totally different from anionic or cationic living polymerization.

Matyaszewski discloses that preferred production method for branched polymers is living radical polymerization and includes monomers, such as of styrene, **acrylonitrile, C1 -C8 esters of (meth)acrylic acid**, vinyl chloride, vinyl acetate and tetrafluoroethylene. Polymers preferably have a polydispersity of 1.50 or less, **more preferably 1.3 or less, even more preferably 1.2 or less and most preferably 1.15 or less**. (col.38, lines 60-65). Matyaszewski discloses a variety of suitable polymers, including acrylates, methacrylates, styrene and other vinyl polymers, terminated by a variety of functional groups. It is further taught by Matyaszewski that the end functionality of polymers can be easily converted to other functional groups, and initially containing CO₂R group is identified as an initial functional group. Matyaszewski exemplifies preparation of a branched polymer from macromonomer using styrene with vinyl acetate functional groups by living radical polymerization. However, the macromonomer having end group as instantly claimed for making branched polymers is not taught or suggested in Matyaszewski.

No other prior art that anticipates or suggests fairly the instant claims has been located as of the date of this office action. Therefore, claims 1-8, 10-12, 15-17, 25-32 and 37, 38 are allowed over the prior art of record.

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tatyana Zalukaeva whose telephone number is (571) 272-1115. The examiner can normally be reached on 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tatyana Zalukaeva
Primary Examiner
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April 29, 2005